

**ADVANCED ADAPTIVE PRE-DISTORTION IN A  
RADIO FREQUENCY TRANSMITTER**

Abstract of the Disclosure

The present invention is related to methods and apparatus that advantageously permit the more efficient use of an input range of an analog-to-digital converter used by an adaptive predistortion linearized RF transmitter. A main signal component of a down-converted output of an RF transmitter is removed prior to the analog-to-digital conversion of the down-converted output, thereby allowing more of the input range of the analog-to-digital converter to capture an error signal component of the down-converted output. Embodiments of the present invention can thus adaptively tune the predistortion stage to a higher degree of linearity or can use lower cost analog-to-digital converters with fewer quantization steps for the same performance.

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